MANDATORY PARTNER ROTATION AND AUDIT QUALITY: EVIDENCE FROM U.S. AUDIT FIRM ARCHIVAL DATA

A Dissertation

by

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ABSTRACT

Although mandatory partner rotation has existed in the U.S. in some form since the 1970s, insufficient U.S. partner-specific data has limited researchers' ability to examine the costs and benefits of mandatory U.S. partner rotation in the current audit environment. Using proprietary data from a large international audit firm, I investigate the effect of mandatory lead partner rotation in the U.S. on three proxies for audit quality: audit fees, identifying and reporting a material control weakness, and providing a modified audit opinion.

Controlling for client- and audit-specific characteristics, I provide evidence that mandatory rotation of the lead engagement partner increases audit quality in the year of rotation among larger audit offices only; audit quality is lower in the year of mandatory lead partner rotation in smaller offices. Further, rotation increases audit quality when the incoming lead engagement partner has the requisite industry expertise, but decreases audit quality when the lead partner lacks such expertise. Additional analyses show that mandatory *concurring* partner rotation has a similar, albeit weaker effect on audit quality. My results are robust to various proxies for audit quality, time periods, and model specifications. These findings provide evidence on the costs and benefits of partner rotation and informs practitioners, academics, and regulators as to the consequences of mandatory partner rotation in the U.S.

DEDICATION

To my wonderful wife, Marcie, and our four children, Spencer, Gavin, Tyler, and Emma. With the help of the former I can accomplish anything; with the help of the latter it's a miracle anything gets accomplished.

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1. INTRODUCTION

To preserve auditor independence, auditing standards have, since the 1970s, required U.S. audit partners to regularly rotate audit clients (AICPA 1978; U.S. House of Representatives Sarbanes-Oxley Act 2002). However, because of limited access to partner-level data, prior research has been limited in its ability to address mandatory partner rotation's effectiveness and its overall effect is still unclear (DeFond and Zhang 2014).[1] In response to a call for additional research on the specific costs and benefits of mandatory partner rotation (Bamber and Bamber 2009), I use a large audit firm's proprietary database on partner rotations to investigate the overall effects of mandatory U.S. partner rotation on audit quality, as well as cross-sectional settings in which these effects may be more or less pronounced.

The purpose of mandatory partner rotation is to preserve auditors' independence by 1) ensuring that audit partners do not become overly familiar with the client as the tenure of the partner-client relationship increases, and 2) providing a "fresh look" at client risks (Bamber and Iyer 2007; SEC 2003). Using rotation to preserve auditor independence, however, comes at the cost of client-specific knowledge, which is important for effectively employing a risk-based audit strategy. In a recent survey, both investors and audit partners indicate that the knowledge, experience, and training of engagement team members are among the most important determinants of audit quality (Christensen, Glover, Omer, and Shelley 2015). This knowledge and expertise is most

[1] Prior studies investigating mandatory partner rotation use limited U.S. data from before Sarbanes-Oxley (Bedard and Johnstone 2010), estimate when U.S. rotation events occur (Litt, Sharma, Simpson, and Tanyi 2014), or use international data (Chi, Huang, Liao, and Xie 2009; Lennox, Wu, and Zhang 2014).

important at the lead and concurring partner level, because those individuals ultimately make the decision on the audit opinion.[2] Therefore, while requiring partner rotation may improve audit quality by avoiding reductions in independence, rotation may also reduce audit quality through the loss of client-specific knowledge developed by the partner. As such, the net effects of mandatory partner rotation on audit quality are unclear.

In addition to the general effects of rotation, and to add cross-sectional evidence to prior literature (e.g., Lennox et al. 2014), I examine whether the effect of mandatory partner rotation on audit quality depends on audit office size. The Securities and Exchange Commission (SEC) acknowledged that it might be more difficult for smaller audit firms with fewer partners and clients to effectively comply with mandatory rotation requirements (SEC 2003). While the SEC's concerns related to smaller audit *firms*, small offices *within* larger audit firms may face similar constraints in complying with rotation requirements. A recent survey of audit partners by Daugherty, Dickins, Hatfield, and Higgs (2012) further suggests that the negative effects of partner rotation may be exacerbated in small audit offices. Alternatively, Francis and Yu (2009) indicate that larger audit offices perform higher quality audits, which they attribute to more in-house experience. This experience, along with more resources, may allow large audit offices to withstand the loss of partners' client-specific knowledge upon mandatory rotation. Therefore, large offices' collective experience and resources potentially result in a net positive effect from partner rotation. Alternatively, small audit offices may not be able to

[2] Concurring partners (also known as engagement quality review partners) review the audit and provide a concurring opinion of report issuance (PCAOB 2009). For parsimony, I refer to them throughout the text as concurring partners.

readily replace the client-specific knowledge of the departing partners, thus increasing the costs of rotation in small audit offices such that the costs outweigh any benefits associated with preserving independence and allowing a fresh perspective.

I evaluate mandatory partner rotation's effect on three proxies for audit quality. First, I examine mandatory rotation's effect on audit fees. While higher audit fees do not automatically result in higher audit quality, they are typically associated with more auditor effort, and thus higher quality (DeFond and Zhang 2014). Therefore, holding client risk constant and capitalizing on the exogenous nature of mandatory partner rotation, higher (lower) audit fees in the year of rotation indicate higher (lower) audit quality. Second, I examine the likelihood of the audit firm reporting a material control weakness in its opinion on the effectiveness of the company's internal controls. The majority of control weaknesses are identified through auditors' tests of controls (Bedard and Graham 2011); therefore, a higher (lower) likelihood of identifying and reporting a material weakness indicates higher (lower) audit quality (DeFond and Lennox 2015). Finally, I examine auditor reporting conservatism in the year of mandatory lead partner rotation as measured by the likelihood of issuing a modified audit opinion. The audit opinion is the final product of the audit and prior literature has used an auditor's propensity to issue a modified audit opinion as a measure of conservatism (e.g., Francis and Krishnan 1999). As such, all else constant, a higher (lower) likelihood of issuing a modified audit report indicates higher (lower) audit quality.

Using data from a large international audit firm's U.S. public client portfolio from 2000-2012, and across all three audit quality proxies, I find no evidence that

mandatory rotation of the lead partner has a significant effect on the quality of audits generally. However, consistent with concerns voiced by SEC while formulating current partner rotation rules, I find that mandatory lead partner rotation has a positive effect on audit quality in large offices, but a negative effect in smaller offices. Specifically, in the year of mandatory lead partner rotation in larger offices I find evidence of higher audit fees, a higher likelihood of identifying and reporting a material weakness, and a higher likelihood of providing a modified audit opinion. Alternatively, auditors in small offices are *less* likely to identify and report material weaknesses in the year of lead partner rotation. This combination of results suggests that while mandatory lead partner rotation increases audit quality in large audit offices, it *reduces* audit quality for small audit offices.

As an additional cross-sectional test, I examine whether the lead engagement partner's industry expertise moderates the effect of mandatory rotation on audit quality. A significant cost of mandatory partner rotation is the loss of the outgoing partner's client-specific knowledge; however, this loss may be tempered if the incoming partner has other clients in the same industry. In this case, the benefits of a fresh look may outweigh any loss of client-specific knowledge. Consistent with this notion, I find that mandatory lead partner rotation significantly increases audit quality when the incoming lead partner has expertise in the new client's industry. Alternatively, if the partner lacks industry expertise, audit quality is significantly lower in the year of mandatory lead partner rotation. Finally, I examine the effect of concurring partner rotation on audit quality and find evidence of lower audit fees in small audit offices and a higher

likelihood of reporting a material weakness in the year of mandatory concurring partner rotation in large audit offices. Therefore, similar to the effect of mandatory lead partner rotation, the effect of mandatory concurring partner rotation is moderated by office size.

This study contributes to the literature in several ways. First, it provides direct evidence, using actual audit firm data, on the effect of mandatory partner rotation on audit quality using a large sample of publicly-traded U.S. companies. Whereas previous studies are limited to a few years of data before the current rotation requirements were in place (e.g., Bedard and Johnstone 2010), are forced to assume when mandatory rotation occurs (Litt et al. 2014), or examine international settings (e.g., Lennox et al. 2014), I am able to examine actual rotation data from 2000-2012 for U.S. companies.

Second and more importantly, my findings indicate that the effect of mandatory partner rotation on audit quality is not the same for all audit clients. While I present evidence of increased audit quality in the year of mandatory partner rotation in large offices, small offices appear to struggle to cope with mandatory rotation requirements. In setting mandatory rotation guidelines, the SEC acknowledged concerns about the ability of smaller audit firms to implement mandatory partner rotation. My results suggest that similar concerns exist for small offices within large audit firms, consistent with the survey results of Daugherty et al. (2012). Further, I find that the lead partner's industry expertise appears to moderate the effect of reduced client-specific knowledge, but when industry expertise is not present, audit quality is reduced. These cross-sectional findings directly respond to Bamber and Bamber's (2009) request for evidence of the specific

costs and benefits of mandatory partner rotation and provide insights for audit firms to consider when rotating partners.

Third, given the PCAOB's renewed proposal to require the disclosure of audit partner names in the audit report (PCAOB 2013) or as potential audit quality indicators (PCAOB 2014), this study provides a timely analysis of the impact of U.S. audit partners on audit quality. Finally, I provide the first evidence on the effect of *concurring* partner rotation in the U.S. These findings inform practitioners, academics, and regulators as to the consequences of U.S. mandatory partner rotation.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Regulatory Background

Periodic, mandatory rotation of key audit partners has traditionally been accepted as an acceptable method of enhancing auditor independence. In the 1970s, the AICPA required lead engagement partners to rotate clients every seven years (AICPA 1978). Similarly, the International Ethics Standards Board for Accountants (IESBA), the ethics body of the International Federation of Accountants, mandates key partner rotation at least every seven years (IESBA 2013). These standards were deemed insufficient following the accounting scandals of the early 2000's, prompting the U.S. House of Representatives to pass the Sarbanes-Oxley Act of 2002 (SOX), mandating that lead engagement partners rotate at least every *five* years (U.S. House of Representatives 2002). SOX also extended the rotation requirement to concurring review partners, partners who serve a quality control role but were not previously subject to rotation under AICPA and SEC guidelines. While SOX did not specify the length of the cooling-off period following partner rotation, the SEC subsequently established that rotating partners cannot have any association with the client for five years following rotation (SEC 2003).

2.2 Mandatory Rotation and Audit Quality

The concepts of audit partner rotation and tenure are necessarily related, and several studies have examined U.S. data regarding audit *firm* tenure to inform the debate as to U.S. audit firm rotation (Ghosh and Moon 2005; Myers, Myers, and Omer 2003). These studies generally find evidence suggesting that greater client-specific knowledge

gained over time produces higher quality audits, suggesting that mandatory audit firm rotation would potentially decrease audit quality because of the loss of client-specific knowledge. However, audit firm rotation involves competition and changes *between* audit firms resulting in different engagement teams and audit methodologies, whereas partner rotation involves only within-firm changes, keeping the engagement team largely intact. Therefore, research on audit *firm* rotation cannot speak directly to the effects of mandatory *partner* rotation.

Two compelling arguments exist for predicting an association between audit quality and audit partner rotation. While some argue that the loss of client knowledge upon rotation reduces audit quality, others suggest that a "fresh look" increases the independence and objectivity of the audit partner, thus increasing audit quality. I discuss these competing arguments and relevant literature below.[3]

Partners gain client-specific experience over time that helps them to better understand client risks, enabling partners to effectively implement risk-based audit strategies in line with professional standards (PCAOB 2010) and maximize the likelihood that the engagement team will identify material misstatements and issue the correct audit opinion. Recent survey evidence suggests that both partners and investors view the experience and competence of the audit engagement team as primary drivers of audit quality (Christensen et al. 2015). Further, a number of studies suggest that

[3] International literature examining the effects of partner tenure and non-mandatory partner rotation are mixed (see Azizkhani 2013; Carey and Simnett 2006; Chen et al. 2008; Chi and Huang 2005; Fargher et al. 2008; Stewart et al. 2013) and may not apply in a U.S. setting due to differences in regulatory settings. I focus my discussion on U.S. studies that examine partner rotation, as well as two international studies on mandatory partner rotation.

auditor/firm expertise improves audit quality (Beck and Wu 2006; Bedard 1989; Bonner 1990; Hammersley 2006; Ittonen, Johnstone, and Myllymaki 2014; Owhoso, Messier, and Lynch 2002; Reichelt and Wang 2010; Stephens 2011; Taylor 2000; Wright and Wright 1997). Thus, greater understanding of client risks should improve audit quality.

Management literature suggests that knowledge transfer from one individual to another (i.e., the outgoing partner to others) is difficult, particularly when the knowledge is context-specific or hard to articulate, such as client risks (Almeida and Kogut 1999; Argote and Ingram 2000; Nonaka 1991). Therefore, the client-specific knowledge of the partner would be lost following rotation, potentially reducing audit quality by reducing the ability of the engagement team to perform a risk-based audit. Litt et al. (2014) make some assumptions regarding partner rotation in the U.S. and find lower audit quality in the two years after assumed mandatory partner rotation.[4] Chi et al. (2009) examine mandatory partner rotation in Taiwan and find some evidence of lower audit quality following mandatory partner rotation. These studies provide limited evidence that the loss of partners' client-specific knowledge through rotation can impair audit quality.

Alternatively, regulators have voiced the concern that auditors' independence and objectivity decrease as partner-client tenure increases. One potential outcome is that partners may become more willing to acquiesce to client demands as the length of the auditor-client relationship increases. Regulators also posit that a new partner may bring a

[4] Litt et al. (2014) is subject to the same data limitations as other U.S. studies, namely, they are unable to explicitly determine when rotation occurs. Instead, their study makes the assumption that partners rotate only when mandated by regulation, not allowing for the possibility of non-mandatory rotation. Table 1, Panel B, indicates a non-trivial level of non-mandatory lead partner rotation. As such, due to inherent data limitations, it is unclear the extent to which Litt et al. (2014) is able to provide insights into the effects of mandatory partner rotation.

"fresh look" to the audit, enabling them to identify new risks (SEC 2003). While knowledge transfer from one individual to another is difficult, research suggests that individuals are rather adept at applying their own past knowledge to new settings (see Argote and Ingram 2000). Vermeulen and Barkema (2001, 461) find that companies that engage in acquisitions are "exposed to a large variety of events and ideas, which enables them to develop richer knowledge structures and decreases the rigidity in their mental maps and routines." Similarly, a new partner brings a different perspective to the audit engagement team and thus may help to identify risks overlooked by the prior engagement team.

In an audit setting, Bamber and Iyer (2007) find that auditors are more likely to identify with their clients (i.e., see themselves and their interests as similar to those of the client) as the tenure of the auditor-client relationship increases. Further, they find that those auditors who identify more with their client are less likely to resist aggressive accounting positions by management. Tan (1995) finds that auditors who inherit a client from another auditor pay more attention to facts inconsistent with prior year decisions than auditors who were involved with the prior year audit. As such, mandatory rotation could *increase* audit quality by increasing the independence and objectivity of the lead engagement partner and by bringing a fresh perspective to the audit engagement. In support of this notion, Lennox et al. (2014) examine Chinese data and report higher audit quality in both the year before and the year of mandatory rotation. Using pre-SOX data from one U.S. audit firm, Bedard and Johnstone (2010) demonstrate that planned audit

effort increases in the year of partner rotation, indicating a likely increase in audit quality.[5]

Because evidence exists both for and against mandatory partner rotation, the net costs and benefits of audit partner rotation in the U.S. are unclear.[6] Further, these studies do not explicitly address mandatory U.S. partner rotation in the current environment and thus are unable to inform the debate concerning the efficacy of current mandatory partner rotation requirements. As such, the net effect of mandatory U.S. partner rotation on publicly-traded companies remains an open empirical question. Given the competing arguments as to the effect of mandatory rotation on audit quality, I state H1 in the null as follows:

H1: Mandatory lead partner rotation has no effect on audit quality.

2.3 Partner Rotation and Office Size

In establishing the current standard on partner rotation, the SEC acknowledged concerns that mandatory partner rotation might have disproportionately higher implementation costs for small audit firms (SEC 2003). These concerns were primarily based on the logistical difficulty facing small audit firms with fewer partners, and thus

[5] Although Bedard and Johnstone (2010) examine planned and not actual audit effort, actual audit effort is frequently equal to, if not greater than, planned audit effort (Coram, Ng, and Woodliff 2003).

[6] In an unpublished dissertation, Matthews (2012) uses U.S. data from 1990-2010 to examine U.S. partner rotation and audit quality. This data was obtained from a few offices as well as through partner signature analysis from audit reports. The study finds that audit quality improves in the year of rotation, but only if audit quality is unusually low in the year before rotation. In a recent working paper, Laurion, Lawrence, and Ryans (2014) use SEC comment letters to identify partner changes. This approach relies on observations in which the audit partner was voluntarily copied on the SEC communications and is unable to differentiate between mandatory and non-mandatory rotation. My data includes an audit firm's comprehensive listing of partners and client companies that enables me to identify and examine mandatory partner rotations.

fewer degrees of freedom, to comply with mandatory rotation requirements while still assigning partners to clients in an efficient and effective manner. Accordingly, audit firms with fewer than five public clients and fewer than ten partners are exempt from mandatory partner rotation requirements. While large audit firms clearly do not qualify for this exemption, small offices *within* large audit firms may face similar constraints in complying with mandatory rotation requirements. Particularly difficult for these smaller offices is the five-year cooling-off period during which small offices have fewer partners from whom to choose when a client needs a new partner.

A recent survey by Daugherty et al. (2012) suggests that the potential negative effects of mandatory partner rotation may be exacerbated in small offices. Small offices' inability to easily replace the loss of client-specific knowledge potentially offsets any benefits of a fresh look at client risk or increased partner independence. Additionally, because of the small number of partners in small audit offices, rotating partners are more likely to have some familiarity with the new client from intraoffice interactions, potentially reducing the incremental benefits of the fresh look.

In contrast, large audit offices with more partners and clients likely have fewer problems complying with mandatory rotation requirements. Large audit offices are better able to compensate for the loss of client-specific knowledge of the rotating partner because of a larger quantity of overall knowledge within the office. Using the issuance of going concern opinions and the level of discretionary accruals as measures of audit quality, Francis and Yu (2009) find that large audit offices perform higher-quality audits. One possible explanation for this finding is that large offices have more collective

industry and client-specific knowledge, enabling all of its auditors to perform better audits. Because this general knowledge can help offset the loss of client-specific knowledge of the departing partner, and because the larger number of partners and clients lessens the logistical difficulties associated with rotation, mandatory rotation would likely be more beneficial in large audit offices.

Bamber and Bamber (2009, 398) have called for research that explicitly examines the costs and benefits of partner rotation to establish "whether and to what extent audit partner rotation leads to any measurable benefits at all." To accomplish this, I examine office size, an audit characteristic of concern to regulators in regard to partner rotation (SEC 2003) and that has been associated with cross-sectional differences in audit quality in the literature (Francis and Yu 2009; Francis, Michas, and Yu 2013). Based on the discussion above, I expect that the effect of mandatory partner rotation is primarily beneficial to audit quality in large offices, but primarily detrimental to audit quality in small offices. I state H2 as follows:

> **H2:** Office size moderates the effect of mandatory partner rotation on audit quality, with a positive effect in large audit offices and a negative effect in small audit offices.

3. SAMPLE AND METHODOLOGY

3.1 Sample Selection

I obtain partner rotation data (both mandatory and non-mandatory) from a large accounting firm subject to annual PCAOB inspection.[7] Consistent with prior literature utilizing an audit firm's proprietary archival data (e.g., Bedard and Johnstone 2010), I cannot provide the exact number of company-year observations in my dataset. However, the initial sample is in the thousands of company-year observations. My initial dataset includes company-year observations from 1998-2013 for which I require that the audit firm in question be the auditor of record for a financial statement audit resulting in a 10-K filing (e.g., after removing audits of an 11-K Employee Benefit Plan) and have data on lead engagement partners. From this initial sample, I remove company-year observations that do not merge with Compustat. Because of audit fee disclosures beginning in 2000 and because of incomplete rotation data in 2013, I also remove observations for fiscal years before 2000 or after 2012. Finally, to ensure consistency between data sources, I remove observations for which the audit firm identifier in Audit Analytics did not correspond to the participating audit firm, resulting in a base sample that numbers in the thousands of company-year observations. Additional sample reductions are made based on regression-specific data requirements.

[7] Partner data is listed by generic partner identification and not by actual partner name. I affirm that the original dataset has been seen by members of my dissertation committee, some of whom have also spoken to the individual who provided the data. Some manipulation of the original dataset was required (e.g., adjusting fiscal years for companies with fiscal year-ends from January through May in order to merge with Compustat). Inferences are consistent when these observations are dropped from the sample, suggesting that results are not driven by possible errors introduced during the data cleaning process.

In the absence of mandatory partner rotation, it is difficult to accurately determine the effect of partner rotation on audit quality because of the endogenous choice of partners to rotate off of a client. A myriad of factors can influence this choice including, but not limited to, difficulty with the client, partner retirement, changes to the office-specific portfolio of clients or partners, etc. As such, it is not clear whether findings from studies that do not explicitly differentiate between mandatory and non-mandatory firm or partner rotation can be applied in a mandatory rotation setting (see discussion in Chi et al. 2009, 364; Lennox et al. 2014, 1795; Myers et al. 2003, 796). Regulator-mandated rotation, however, provides a setting in which the rotation event is exogenously determined and thus allows researchers to arrive at unbiased inferences regarding the effect of partner rotation on audit outcomes.

My main analyses focus on lead partner rotation; concurring partner rotation is addressed in Section V. I create a dataset that contains all client-year observations in which mandatory lead partner rotation occurred as well as all client-year observations in which no lead partner rotation occurred. This sample explicitly excludes observations with non-mandatory lead partner rotation to ensure that all lead partner rotations are due to mandatory rotation, and allows me to examine the average effect of mandatory lead partner rotation on audit quality.[8] For the analyses of audit fees and modified opinions, I include observations from 2000-2012. Material weaknesses were not reported until

[8] Inferences are robust to including all observations and controlling for non-mandatory lead partner rotation.

2004, thus samples used to test the effect of mandatory partner rotation on material weakness disclosure include years 2004-2012.

3.2 Audit Quality

Audit quality is a multi-faceted construct, suggesting that it may be necessary to examine multiple proxies to arrive at meaningful inferences (Christensen et al. 2015; DeFond and Zhang 2014; Knechel, Krishnan, Pevzner, Shefchik, and Velury 2013). In this study, I examine the effect of mandatory partner rotation on audit quality using three main proxies: audit fees; disclosures of material weaknesses; and modified audit opinions.

3.2.1 Proxy for Audit Quality: Audit Fees

My first proxy for audit quality is the log of audit fees. While paying higher audit fees alone does not guarantee higher audit quality, both auditors and investors generally associate the payment of reasonable fees with higher audit quality (Christensen et al. 2015; DeFond and Zhang 2014; Francis, Reichelt, and Wang 2005). I estimate the following regression model consistent with existing audit fee literature (e.g., Charles, Glover, and Sharp 2010; Hay, Knechel, and Wong 2006):

$$LogAF_{i,t} = \beta_0 + \beta_1 MandatoryRotation_{i,t} + \beta_2 LogAT_{i,t}{}_{i,t} + \beta_3 DAcc_{i,t-1} +$$

$$\beta_4 Segment_{i,t} + \beta_5 Foreign_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Loss_{i,t} + \beta_8 AR\_INV_{i,t} +$$

$$\beta_9 Leverage_{i,t} + \beta_{10} Special_{i,t} + \beta_{11} MB_{i,t} + \beta_{12} Modify_{i,t} + \beta_{13} LogNAF_{i,t} +$$

$$\beta_{14} Chg\_Aud_{i,t} + \beta_{15} Expert_{i,t} + \beta_{16} OfficeClients_{i,t} + \beta_{17} LogTenure_{i,t} +$$

$$\beta_{18} ReportLag_{i,t} + \beta_{19-22} OtherPtnrChanges_{i,t} + Year + Industry + \mu, \qquad (1)$$

where *LogAF* is the log of total audit fees. Audit fees compensate auditors for effort expended over the course of the audit, with higher fees normally equating to higher levels of auditor effort (Simunic 1980). *MandatoryRotation* is an indicator variable equal to 1 in years in which the audit firm mandatorily rotated the lead engagement partner (i.e., the first year of the new partner), and equal to 0 otherwise. Using regression to hold client risk and other engagement characteristics constant, a positive (negative) coefficient on *MandatoryRotation* indicates the payment of higher (lower) audit fees in the year of rotation, thus higher (lower) audit quality.

In addition to controlling for company size (*LogAT*), which is the primary determinant of audit fees, I also control for potential earnings management by including lagged discretionary accruals (*DAcc*) as measured by the modified Jones model (Dechow, Sloan, and Sweeney 1995). I control for company complexity by including variables capturing the number of business segments (*Segment*) and foreign income (*Foreign*), and for financial performance by including return on assets (*ROA*) and an indicator variable indicating a loss in the current or prior two years (*Loss*). I further control for various company specific characteristics shown to require additional audit effort and thus audit fees. Specifically, I control for a company's accounts receivable and inventory levels (*AR_INV*), debt (*Leverage*), the reporting of special items (*Special*), and growth (*MB*). It is also important to ensure that results are not driven by other auditor-related characteristics. Therefore, I control for the presence of a modified audit opinion (*Modify*), logged non-audit fees (*LogNAF*), the first year of the auditor-client relationship (*Chg_Aud*), the audit firm's industry expertise (*Expert*), the size of the audit

firm office (*OfficeClients*), the logged tenure of the audit firm-client relationship (*LogTenure*), and the amount of time required to complete the audit (*ReportLag*).

Audit quality in the year of mandatory lead partner rotation may also be affected by rotation of the concurring partner as well as potential effects in the year before mandatory partner rotation (Cassell, Myers, Seidel, and Zhou 2014; Daugherty et al. 2012; Lennox et al. 2014). Therefore, it is important to control for these other changes in the audit team's environment to isolate the effect of mandatory lead partner rotation. Accordingly, *OtherPtnrChanges* is a vector of indicator variables that are set equal to 1 for the year before mandatory lead partner rotation, the year of mandatory concurring partner rotation, the year before mandatory concurring partner rotation, and years of non-mandatory concurring partner rotation, and set equal to 0 otherwise. For parsimony, these control variables are not reported in the tables; see Section V for additional discussion. I also include year- and industry-fixed effects and cluster standard errors by company. See Appendix A for detailed variable descriptions.

3.2.2 Proxy for Audit Quality: Material Control Weakness Disclosures

My second proxy for audit quality is the reporting of a material control weakness in the auditor's opinion on internal control effectiveness. I estimate the following logistic regression model:

$$MW_{i,t} = \beta_0 + \beta_1 MandatoryRotation_{i,t} + \beta_2 Misstated_{i,t-1} + \beta_3 LogAT_{i,t} + \beta_4 Loss_{i,t-2} + \beta_5 XFin_{i,t} + \beta_6 LogAF_{i,t} + \beta_7 LogNAF_{i,t} + \beta_8 Chg\_Aud_{i,t} + \beta_9 Chg\_Mgmt_{i,t} + \beta_{10} Expert_{i,t} + \beta_{11} OfficeClients_{i,t} + \beta_{12} LogTenure_{i,t} + \beta_{13} ReportLag_{i,t} + \beta_{14-17} OtherPtnrChanges_{i,t} + Year + \mu, \quad (2)$$

where *MW* is an indicator variable equal to 1 if the audit firm's opinion on internal controls reports a material weakness in year *t*, and equal to 0 otherwise. Again, *MandatoryRotation* is the main variable of interest, where a positive (negative) coefficient on *MandatoryRotation* indicates a higher (lower) likelihood of reporting a material weakness in the year of rotation. Consistent with Rice and Weber (2012) and DeFond and Lennox (2015), higher quality audits should increase the likelihood that material weaknesses are detected and reported. Therefore, holding client risk constant and only allowing for the change of audit partners through mandatory rotation, a positive (negative) coefficient on *MandatoryRotation* is interpreted as higher (lower) audit quality in the year of rotation.

Consistent with Rice and Weber (2012), I also control for whether the prior year was subsequently restated (*Restated*), which is likely to be associated with material weaknesses in the current year. I control for company size as measured by total assets (*LogAT*). To control for factors that likely affect the financial resources available to establish an effective control environment, I also control for reporting a loss in the current or previous two years (*Loss*) as well as external financing obtained (*XFin*). I directly control for auditor effort using audit fees (*LogAF*) and non-audit fees (*LogNAF*). Finally, because a new audit firm or new management can fault previous regimes for problems identified in the current year, I control for the first year of the auditor-client relationship (*Chg_Aud*) as well as changes in CEO or CFO (*Chg_Mgmt*). To account for other auditor-related characteristics, I also control for the audit firm's local industry expertise (*Expert*), office size (*OfficeClients*), the logged tenure of the audit firm-client

relationship (*LogTenure*), and the length of the audit (*ReportLag*). Consistent with Equation (1), I also include the vector of control variables for other partner changes (*OtherPtnrChanges*), and I include year-fixed effects and cluster standard errors by industry.[9]

3.2.3 Proxy for Audit Quality: Modified Audit Opinion

The audit opinion is the only direct communication between auditors and investors, and prior literature has considered the content of the audit report as relevant in determining audit quality (DeFond and Zhang 2014). Therefore, I use modified audit opinions as a proxy for auditor reporting conservatism and estimate the following logistic regression:

$$Modify_{i,t} = \beta_0 + \beta_1 MandatoryRotation_{i,t} + \beta_2 LogAT_{i,t} + \beta_3 Segment_{i,t} + \beta_4 Foreign_{i,t} + \beta_5 MB_{i,t} + \beta_6 Leverage_{i,t} + \beta_7 ROA_{i,t} + \beta_8 AR\_INV_{i,t} + \beta_9 Loss_{i,t} + \beta_{10} Special_{i,t} + \beta_{11} LogNAF_{i,t} + \beta_{12} Chg\_Aud_{i,t} + \beta_{13} Expert_{i,t} + \beta_{14} OfficeClients_{i,t} + \beta_{15} LogTenure_{i,t} + \beta_{16} ReportLag_{i,t} + \beta_{17} CashFlow_{i,t} + \beta_{18} Merger_{i,t} + \beta_{19} Litig_{i,t} + \beta_{20} RetVol_{i,t} + \beta_{21-24} OtherPtnrChanges_{i,t} + Year + \mu, \quad (3)$$

where *Modify* is an indicator variable equal to 1 if the audit report issued in period *t* diverges from the standard unqualified audit report, and equal to 0 otherwise (Francis

[9] Industry-fixed effects are omitted from logistic regressions in Equations (2) and (3) due to loss of sample size from perfect prediction of the dependent variable within some industry groups. I cluster on 2-digit SIC code, thus providing sufficient clusters to estimate robust standard errors. Cameron et al. (2011) suggest that clustering at the highest aggregate level of observation is preferred and accounts for possible correlation of errors at a lower level. Thus clustering on industry also accounts for possible correlation of errors at the company level. Inferences are consistent if I include industry-fixed effects and cluster standard errors by company.

and Krishnan 1999). Potential differences from the standard audit report include qualified opinions, emphasis of matter paragraphs, going concern modifications, or adverse opinions. Given the potential for such additional information to be viewed as negative news by investors, Francis and Krishnan (1999) characterizes the issuance of a modified opinion as capturing auditor conservatism. Therefore, higher (lower) audit quality in the year of mandatory lead partner rotation will be evidenced by a positive (negative) coefficient on *MandatoryRotation.*

To isolate the effect of having a newly-rotated partner on the likelihood of issuing a modified audit opinion, I control for company size (*LogAT*) and complexity and performance (*Segment, Foreign, MB, Leverage, ROA, AR_INV, Loss, Special*). I also control for the auditor-specific characteristics (*LogNAF, Chg_Aud, Expert, OfficeClients, LogTenure, ReportLag*) included in Equations (1) and (2). Following Francis and Krishnan (1999) and Bradshaw et al. (2001), I control for cash flow (*CashFlow*) and stock return volatility (*RetVol*).[10] Finally, I control for litigious industries (*Litig*) and M&A activity (*Merger*) because of the potential for litigation and mergers and acquisitions activity to generate items significant enough to merit mention in an auditor's emphasis of matter paragraph. Consistent with Equation (2), I include a vector of control variables for other partner changes (*OtherPtnrChanges*), and I include year-fixed effects and cluster standard errors by industry.

[10] Bradshaw et al. (2001) and Francis and Krishnan (1999) also include a measure of discretionary accruals as their independent variable of interest. In untabulated analysis, I include *DAcc* in Equation (3). The coefficient on *DAcc* is insignificant (p=0.245) and including this variable in Equation (3) results in a 10 percent sample reduction. As such, I omit *DAcc* from Equation (3).

3.3 Tests of Hypotheses

The primary independent variable of interest is *MandatoryRotation*, an indicator variable equal to 1 if the company-year observation experienced mandatory lead partner rotation in that year, and equal to 0 otherwise. Because of competing theories, H1 is stated in the null, that mandatory lead partner rotation has no effect on audit quality. Higher audit quality in the year of mandatory lead partner rotation will be evidenced by a positive coefficient in Equation (1) (i.e., higher audit fees), Equation (2) (i.e., higher likelihood of identifying and reporting material weaknesses), and Equation (3) (i.e., higher likelihood of issuing a modified audit opinion). Alternatively, a negative coefficient on *MandatoryRotation* in Equations (1) – (3) will signal lower audit quality in the year of mandatory lead partner rotation as evidenced by lower fees, a lower likelihood of identifying and reporting material weaknesses, and a lower likelihood of issuing a modified audit opinion.

H2 posits that the effect of mandatory partner rotation on audit quality will depend on office size. To test H2, I split the sample by *LargeOffice*, an indicator variable equal to 1 if the office has a number of clients equal to or greater than the sample median, and equal to 0 otherwise.[11] I then estimate Equations (1), (2), and (3) on all samples. As discussed in Section II, I hypothesize that the effect of mandatory rotation on audit quality to be positive in large audit offices and negative in small audit offices.

[11] In untabulated analysis splitting at the sample mean office size instead of the sample median, I continue to find that office size moderates the effect of mandatory lead partner rotation on material weaknesses and the issuance of modified audit opinions.

4. RESULTS

4.1 Descriptive Statistics

I present all tables referenced in the manuscript in Appendix B. Table 1 reports descriptive statistics for my sample. Table 1, Panel A, presents descriptive statistics; certain variables have been omitted to maintain anonymity of the audit firm. Because Equation (1) is the most comprehensive of the three models used in my analyses and covers the full sample period from 2000-2012, descriptive statistics in Table 1, Panel A are based on observations with sufficient data to estimate Equation (1). For parsimony, variables that are included in multiple models are only presented once.

Although omitted from Table 1, Panel A, mean total assets (*AT*) and mean audit fees (*AF*) of companies in my sample are larger than the median values reported in Compustat and Audit Analytics. Approximately 32 percent of my sample receive an audit report that diverges from the standard unqualified audit report, relatively consistent with the 28 percent reported in Butler, Leone, and Willenborg (2004). Approximately 9 percent report at least one material weakness, consistent with Foster, Ornstein, and Shastri (2007). The consistency of material weakness and modified opinion frequency with prior literature provides comfort that my results are likely not due to idiosyncrasies in the participating audit firm's client base.

Table 1, Panel B, details the frequency of lead and concurring partner rotation in the base sample before any model-specific sample reductions. While 9.44 percent of observations experience mandatory lead partner rotation, only 5.80 percent experience

non-mandatory lead partner rotation.[12] This is consistent with views expressed by partners in Daugherty et al. (2012) in which rotation was generally viewed as a negative event. Therefore, lead engagement partners tend to avoid client rotation until mandated by law, but occasionally do rotate before mandated term limits. The trend among concurring partners is the opposite; only 3.82 percent of observations experience mandatory concurring partner rotation, whereas 11.78 percent experience a non-mandatory change in concurring partner. The infrequency with which concurring partners are mandatorily rotated brings into question whether this class of partners should be forced to rotate, or whether they rotate enough on their own to avoid reductions in independence.

4.2 Multivariate Results

4.2.1 Audit Fees

Table 2 presents the results of estimating Equation (1), which examines the effect of mandatory lead partner rotation on audit fees. Consistent with prior literature, higher audit fees are primarily driven by client size (*LogAT*). Moreover, audit fees are also positively associated with the number of business segments (*Segment*), foreign operations (*Foreign*), loss years (*Loss*), higher accounts receivable and inventory balances (*AR_INV*), higher leverage (*Leverage*), special items (*Special*), growth (*MB*), modified audit opinions (*Modify*), auditor expertise (*Expert*), office size (*OfficeClients*),

[12] Frequency of mandatory lead partner rotation is less than the maximum value of 20 percent (i.e., every five years) due to non-mandatory rotation as well as client-firm relationships that do not reach partner term limits.

and longer audits (*ReportLag*). Alternatively, stronger financial performance (*ROA*) is associated with lower audit fees.

Column 1 of Table 2 compares the effect of mandatory lead partner rotation on audit fees to all observations without lead partner rotation. As indicated by the insignificant coefficient on *MandatoryRotation*, there appears to be no average effect of mandatory lead partner rotation on audit fees (p-value > 0.10). This insignificant result is consistent with Bamber and Bamber (2009), in which concerns were raised about researchers' ability to identify an average effect of partner rotation and thus called for cross-sectional examination. H2 posits that the effect of mandatory lead partner rotation on audit quality depends on office size. Specifically, the benefits of mandatory partner rotation, if any, are likely found in large audit offices, whereas the costs of rotation are expected to be concentrated in small audit offices. Columns 2 and 3 of Table 2 present the results of Equation (1) after splitting samples at the median of the number of clients in an office (*LargeOffice*). As shown in Columns 2 and 3 of Table 2, the coefficient on *MandatoryRotation* is positive and significant among clients audited by large audit offices (p-value = 0.04), and negative but insignificant in small audit offices (p-value = 0.14).[13] Thus, mandatory lead partner rotation is associated with higher fees in large offices, with no similar increase in small offices.[14] Taken together, the results from

[13] Untabulated analysis using seemingly unrelated estimation shows that coefficients on *MandatoryRotation* in Columns 2 and 3 of Table 2 are significantly different from each other (p-value = 0.05). Inferences are also consistent when interacting *MandatoryRotation* with *LargeOffice* (interaction term positive and significant at p-value = 0.05, suggesting higher audit fees upon rotation in large offices than small offices).

[14] These results are consistent when regressing abnormal audit fees (Hribar et al. 2014) on *MandatoryRotation* and control variables from Equation (1).

Columns 2 and 3 in Table 2 suggest that office size moderates the effect of mandatory lead partner rotation on audit quality as proxied for by audit fees.

4.2.2 Material Weaknesses

Table 3 reports the results of estimating Equation (2). All models report adequate fit. Results indicate that prior material misstatements (*Misstated*), poor financial performance (*Loss*), higher audit fees (*LogAF*), changes to the auditor (*Chg_Aud*), and longer audits (*ReportLag*) are all associated with a significantly higher likelihood of reporting a material weakness, whereas clients of industry experts or large offices (*Expert*, *OfficeClients*) are less likely to report a material weakness.

As shown in Table 3, Column 1, mandatory lead partner rotation appears to have no effect on the likelihood of reporting a material weakness when compared to observations with no lead partner rotation (*p*-value > 0.10). This result is consistent with Table 2, and again fails to reject H2 that there is no average effect of mandatory lead partner rotation on audit quality. However, as shown in Columns 2 and 3, auditors in large offices are more likely to report a material weakness in the year of mandatory lead partner rotation (*p*-value = 0.01), whereas auditors in small offices are significantly *less* likely to report a material weakness in the year of rotation (*p*-value = 0.06).[15] This finding further suggests the moderating effect of office size on the relationship between mandatory rotation and audit quality and provides additional evidence in support of H2.

[15] Untabulated analysis using seemingly unrelated estimation shows that coefficients on *MandatoryRotation* in Columns 2 and 3 of Table 3 are significantly different from each other (*p*-value < 0.01). Inferences are also consistent when interacting *MandatoryRotation* with *LargeOffice* (interaction term positive and significant at *p*-value < 0.01, suggesting higher likelihood of identifying and reporting a material weakness upon rotation in large offices than small offices).

4.2.3 Modified Audit Opinions

Table 4 reports the results of estimating Equation (3) to identify the effect of mandatory lead partner rotation on the likelihood of a modified audit opinion. Model fit is adequate in all columns. Coefficients on control variables indicate that client size (*LogAT*), number of business segments (*Segment*), foreign income (*Foreign*), growth (*MB*), non-audit fees (*LogNAF*), clients of industry experts and large offices (*Expert*, *OfficeClients*), longer audits (*ReportLag*), and being in a litigious industry (*Litig*) are associated with a significantly higher likelihood of a modified audit opinion. Alternatively, stronger financial performance (*ROA*), having assets more concentrated in accounts receivable and inventory (*AR_INV*), and having a new audit firm (*Chg_Aud*) are significantly associated with a *lower* likelihood of a modified opinion.

Consistent with my first two proxies for audit quality, results in Column 1 of Table 4 fail to reject H1 (coefficient on *MandatoryRotation* insignificant at *p*-value > 0.10). However, results from Columns 2 and 3 further support H2 that the effect of rotation on audit quality is moderated by office size. Specifically, I find that the year of mandatory lead partner rotation is associated with a significantly higher likelihood of the auditor issuing a modified opinion in large offices (*p*-value = 0.01), with no effect in

small offices (coefficient on *MandatoryRotation* negative and insignificant at *p*-value > 0.10).[16]

When considered together, the multivariate results from Tables 2, 3, and 4 are consistent across my three proxies for audit quality. The evidence suggests that mandatory lead partner rotation in the U.S. does not affect all audit offices equally. Specifically, clients of large offices reap the benefits of higher audit quality in the rotation year, consistent with the greater aggregate knowledge of large offices effectively offsetting the loss of the departing partner's client knowledge, thus allowing for a net benefit of rotation via the incoming partner's fresh look into client risks. However, small offices struggle to implement partner rotation without experiencing reduced audit quality, consistent with recent survey evidence (Daugherty et al. 2012). These findings provide timely evidence on the effect of mandatory lead partner rotation on audit quality, and provide firms with valuable information on areas of potential quality control concerns in rotation years. [17]

4.2.4 Partner Industry Expertise

One of the primary arguments against mandatory partner rotation is the loss of the outgoing partner's client-specific knowledge. However, if the incoming partner has

[16] Untabulated SUEST tests confirms that coefficients on *MandatoryRotation* in Columns 2 and 3 of Table 4 are significantly different from each other (*p*-value = 0.06). Butler et al. (2004) indicate that most modified audit opinions relate to unqualified opinions with explanatory language, i.e., going concern opinions or those with emphasis of matter paragraphs. In untabulated analysis, I modify Equation (3) to examine the likelihood of providing only the more severe of these two options, namely, going concern opinions. While I continue to find a positive sign on *MandatoryRotation* in large offices, the coefficient is insignificant (*p*-value = 0.348).

[17] In untabulated analysis, I remove companies from financial and utility industries from the sample, resulting in a 17 percent sample reduction. Results are consistent with tabulated results.

expertise in the new client's industry, this loss of client-specific knowledge may be tempered, thus resulting in a net benefit from rotation because of the incoming partner's fresh look. As such, I expect a net positive effect of mandatory lead partner rotation when the lead partner has industry expertise, but a net negative effect of rotation among lead partners lacking this expertise. As shown in Table 5, I find that among observations for which the lead engagement partner has at least two clients in the industry, mandatory partner rotation is associated with higher audit quality as evidenced by higher audit fees (coefficient on *MandatoryRotation* in Column 1 positive and significant at *p*-value = 0.01), and a higher likelihood of reporting a material weakness (coefficient on *MandatoryRotation* in Column 3 positive and significant at *p*-value = 0.01). In this case, the incoming partner has at least one other client that is in the same industry as the new client, thus at least partially compensating for the loss of the outgoing partner's client-specific knowledge while allowing for a fresh look at that client's risks. Alternatively, when the client is the lead engagement partner's *only* client in the industry, I find evidence of lower audit quality in the year of rotation, as evidenced by a lower likelihood of reporting a material weakness (coefficient on *MandatoryRotation* in Column 4 negative and significant at *p*-value = 0.06).[18] Therefore, when the lead engagement partner has industry expertise, the benefits of bringing in a fresh look

[18] Untabulated SUEST tests show significant differences in coefficient estimates on *MandatoryRotation* between Columns 1 and 2 ($p = 0.02$), and Columns 3 and 4 ($p = 0.01$) of Table 5. Results are also robust to interacting partner's industry expertise with *MandatoryRotation* instead of splitting the sample for audit fee and material weakness tests ($p < 0.01$ on interaction term in both cases).

outweigh the loss of client-specific knowledge because that loss is, in part, moderated by industry-specific knowledge gained by auditing other clients.[19]

[19] A partner's number of clients within an industry is positively associated with the number of clients in an office (r=0.16, p-value < 0.01, untabulated). To ensure that the partner expertise analysis in Table 5 captures a different moderating effect than the office size analysis in Tables 2-4, in untabulated analysis I re-perform Tables 2-4 while also controlling for the lead engagement partner's industry expertise. All results hold.

5. ADDITIONAL ANALYSES

5.1 Comparison to the Prior Year

Tabulated analysis compares observations with mandatory lead partner rotation to those with no lead partner rotation. Another potential comparison group is the year before the mandatory rotation event. However, it is unclear *a priori* whether the year before mandatory rotation is the optimal comparison. Compared to the year before rotation, audit quality effects in the rotation year could be artificially driven by the "lame duck" year in which the partner may divert attention from the outgoing client to focus on new clients (Cassell, Myers, Seidel, and Zhou 2014; Daugherty et al. 2012). Alternatively, knowing that a fellow partner in the subsequent year will scrutinize audit conclusions from the year before rotation, partners may exercise additional effort in the year before rotation to maintain their reputation (Lennox et al. 2014). In untabulated analyses, I limit my sample to the year before and the year of mandatory lead partner rotation. Using this sample, I compare mandatory lead partner rotation to the year before and find no difference, on average, between the two years using my three proxies for audit quality. This result is consistent with Lennox et al. (2014) who find higher quality in both the year before and the year of partner rotation compared to other years.

5.2 Material Misstatements as Proxy for Audit Quality

Generally accepted accounting principles require that when a material error or misstatement is identified relating to a prior period, those prior-period financial statements must be restated (Financial Accounting Standards Board 2014a, 2014b). Recent research suggests that audit partners and investors view a subsequent financial

statement restatement as one of the most readily available signals of lower audit quality (Christensen et al. 2015). Therefore, in untabulated analysis, I use material misstatements as evidenced by a subsequent restatement as a proxy for low audit quality. Following prior literature (e.g., Cao et al. 2012), I control for the company's size, complexity (M&A and financing activities, business segments, foreign income, leverage, AR and inventory levels, special and extraordinary items), growth, financial performance, change in management, and auditor-related characteristics (audit firm tenure, audit opinion type, office size and expertise, and report lag).

Using a sample from 2000-2010 to allow for adequate time for restatements to be announced relating to my sample period, I find weak evidence that the year of mandatory lead partner rotation is associated with a lower likelihood of material misstatement (coefficient on MandatoryRotation negative, two-tailed *p*-value = 0.12). This result is consistent with the justification put forth by regulators that a "fresh look" improves audit partners' ability to recognize client risks. Additionally, I find that office size moderates the relationship between the year *before* mandatory rotation and audit quality, with a lower likelihood of material misstatement in large offices (coefficient negative, *p*-value = 0.07), and a higher likelihood of material misstatements in small offices (coefficient positive, *p*-value = 0.05). These cross-sectional results are consistent with Lennox et al. (2014), who find higher quality in the year before and the year of partner rotation, likely because of partners' desire to protect their reputation.

5.3 Concurring Partner Rotation and Audit Quality

The majority of studies examining the effects of partner rotation (including this one) focus on lead partner rotation despite the fact that concurring partners are also required to rotate clients. While this focus is consistent with the important and visible role that the lead engagement partner plays, PCAOB standards also require that the audit be reviewed and guided by a concurring engagement partner in order to increase the overall quality of the audit (PCAOB 2009). As such, the concurring partner's rotation may also affect audit quality. Because the concurring partner is not involved in the day-to-day operations of the audit, the concurring partner may not be as likely to fall prey to independence concerns as the lead partner. Therefore, the potential benefits of obtaining a "fresh look" are likely smaller than the costs of losing the client-specific knowledge of the concurring partner upon rotation. On the other hand, precisely because the concurring partner is *not* involved in the day-to-day operations of the audit, such client-specific knowledge loss incurred upon rotation may be minimal. Extant literature specifically examining the engagement review partner is scant and results are mixed (Chi and Chin 2011; Gold, Molls, Pott, and Watrin 2012).

After constructing samples for concurring partner analyses using a method similar to the lead partner sample construction, I estimate Equations (1), (2), and (3) to investigate the effect of mandatory concurring partner rotation on audit quality.[20] Because concurring partners were not subject to tenure and rotation requirements until

[20] Concurring partner rotation analysis includes control variables to control for mandatory and voluntary lead partner rotation, just as lead partner analysis included control variables for mandatory and voluntary concurring partner rotation.

Sarbanes-Oxley's new rotation rules were implemented, I limit the sample for concurring partner rotation analysis to years 2004-2012. In untabulated analysis, I find no effect for mandatory concurring partner rotation on the likelihood of the level of logged audit fees, the likelihood of reporting a material weakness, or the likelihood of a modified audit opinion (*p*-value on *MandatoryRotation* > 0.10 in all cases). However, after splitting the sample by *LargeOffice*, I find that *small* audit offices charge lower fees than large offices in the year of mandatory concurring partner rotation (*p*-value = 0.06), and that *large* audit offices are more likely than small offices to identify material weaknesses in the rotation year (*p*-value = 0.04).[21] This result is consistent with results from lead partner rotation suggesting that mandatory concurring partner rotation's effect on audit quality is moderated by office size.

5.4 Lead Partner Serving as Concurring Partner for another Client

Regulations permit a lead engagement partner to simultaneously serve as a different client's concurring partner. Because concurring partners are audit partners themselves, these individuals frequently seek to have their own lead clients in addition to their review responsibilities. However, serving in both roles may reduce the lead engagement partner's attention during the mandatory rotation year, thus reducing the effect of rotation on audit quality. In untabulated analysis, controlling for instances in which lead partners serve double roles, I continue to find higher audit quality in the year

[21] If concurring partners did not come from the same office as the engagement team, then splitting the sample on engagement team's office size would not be appropriate when examining concurring partner rotation. However, per discussion with a national office partner from the participating firm, the majority of concurring review partners come from the same office as the engagement leader, thus justifying this analysis.

of mandatory lead partner rotation overall, but that the effect is moderated by office size and lead partner industry expertise.

5.5 Different Rotation Regimes

Prior to 2004, lead partners were allowed to serve clients up to seven consecutive years.[22] Because my sample contains observations from 2000-2012, tabulated results also include observations subject to the previous rotation requirements. To ensure that my results are not unduly influenced by these earlier observations, I re-run Equations (1) and (3) including only observations from 2004 through 2012; Equation (2) is already limited to years 2004-2012 due to the availability of material weakness disclosures. Using this revised sample, I continue to find an overall benefit of mandatory lead partner rotation and that this effect is moderated by office size and partner industry expertise. Based on these results, my findings are not driven by observations subject to the previous rotation requirements.

5.6 Requiring a Mandatory Rotation Event for Sample Inclusion

Consistent with prior literature (e.g., Chi et al. 2009), I do not require all companies in my sample to have experienced a mandatory partner rotation to be included in my sample. Many reasons exist as to why a company might not have such an event in my sample period including, but not limited to, the tenure of the auditor-client relationship failing to reach five years, the lead engagement partner rotating before reaching the tenure limit, etc. To ensure that my results are not driven by including

[22] New requirements (e.g., 5-year on, 5-year off) became effective for all fiscal years *starting* on or after May 6, 2003 (SEC 2003). Therefore, the new rotation requirements generally began affecting companies starting with their fiscal year 2004 audits, at the earliest.

companies that never have a lead partner rotate due to term limits, in untabulated analysis I further refine my sample by requiring that a company experience mandatory lead partner rotation at least once. Even under this much stricter sample requirement, I continue to find that the effect of mandatory lead partner rotation on audit quality is moderated by office size and lead partner industry expertise.

6. CONCLUSION

Current guidelines mandate that lead and concurring audit partners rotate clients every five years, followed by a five-year cooling-off period. Because of data availability, empirical evidence on mandatory partner rotation effects on audit quality has been limited primarily to international studies, which may or may not apply to the U.S. setting because of differences in the financial reporting environment. In addition, partners in the U.S. have been subject to some form of mandatory rotation since the 1970s, but the effect of U.S. partner rotation on audit quality is still unclear. I use proprietary data from a large audit firm to respond to Bamber and Bamber's (2009) call for additional research into the specific costs and benefits of mandatory partner rotation.

My results indicate that the effect of mandatory lead partner rotation on audit quality is context-specific. Specifically, I find that compared to all non-rotation years, years of mandatory lead partner rotation in large offices have higher audit fees, a higher likelihood of identifying and reporting a material weakness, and a higher likelihood of an auditor issuing a modified audit opinion, all of which suggest higher audit quality in the rotation year. This result is consistent with the "fresh look" hypothesis put forth by regulators (SEC 2003). Clients of small offices, however, do not experience such benefits. My results support the notion that large offices are better able to deal with mandatory rotation than small offices, and small office audit quality may suffer as a result. I also find that the effect of mandatory lead partner rotation on audit quality depends on the lead engagement partner's industry expertise, with increased audit

quality in the rotation year when the lead engagement partner has experience in the new client's industry, and decreased audit quality when the partner lacks such experience.

I make several contributions to the audit literature in general and the rotation literature specifically. First, I provide the first large sample evidence on mandatory partner rotation in the United States, including both lead and concurring partners. Second, and in direct response to Bamber and Bamber's (2009) call for more nuanced evidence of the effect of rotation, I provide evidence that mandatory rotation is not equally effective in every setting. Understanding conditions in which rotation is beneficial versus when it is costly can inform future regulation and alert audit firms to pay attention to partner rotation effects in smaller offices and when the incoming partner lacks industry experience. Finally, these results suggest that disclosure of partner-specific information is important and can provide useful insights into the determinants of audit quality.

My study is subject to several limitations. First, while the firm used in this study is a large audit firm subject to annual PCAOB inspections, it is only one firm and results could differ for other audit firms. However, because of the large size of the audit firm, it is reasonable to believe my findings apply to other firms, Second, because having rotation requirements vary by audit office size could have unintended consequences (i.e., firms shifting clients and lead partners to smaller audit offices, firms splitting up larger offices, etc.), gaining access to additional data would be especially important in determining future policy implications. Third, my results relating to partner's industry expertise only capture expertise related to clients that file 10-Ks; due to data limitations,

I am unable to capture partner's industry experience provided by auditing private clients. Finally, the study examines mandatory rotation over 12 years, during which individual partners would have experienced mandatory rotation only a few times. As time spent under the current rotation requirements increases, future research can examine how firms adapt to the costs associated with mandatory partner rotation.

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APPENDIX A

VARIABLE DEFINITIONS

Variable	Definition
AF=	Sum of audit fees (Audit Analytics data code 'audit_fees') and audit-related fees (Audit Analytics data code 'audit_related_fees') as reported in the Audit Analytics fee database (Charles et al. 2010). The raw dollar value is then scaled by 1,000.
AR_INV=	Accounts receivable (Compustat data code 'rect') plus inventory (Compustat data code 'invt'), scaled by total assets (Compustat data code 'at'). I winsorize *AR_INV* at the top and bottom 1 percent.
AT=	Total assets (Compustat data code 'at').
CashFlow=	Net cash flow from operating activities (Compustat data code 'oancf') divided by average total assets (i.e., beginning of year + end of year divided by two).
Chg_Aud=	Indicator variable equal to 1 if the audit firm (Audit Analytics data code 'auditor_fkey') in the current year is different than the audit firm in the prior year.
Chg_Mgmt=	Following Rice and Weber (2012), an indicator variable equal to 1 if the company changed CEO or CFO within the current or prior two years according to Audit Analytics, and equal to 0 otherwise.
DAcc=	Discretionary accruals as calculated by a cross-sectional Modified Jones model. Values are estimated for each two-digit SIC/year combination with a minimum of 10 observations (Dechow et al. 1995), scaled by total assets (Compustat data code 'at'). I winsorize *DAcc* at the top and bottom 1 percent.
Expert=	Equal to 1 if an auditor's fee-based market share within an MSA-Industry level is greater than or equal to 50 percent in a given year. Observations with only one client in an MSA-industry-year are reset to 0. Market share calculations are made using all necessary data from Audit Analytics and before any sample reductions. A 50 percent MSA-industry threshold is consistent with city expertise as captured in Reichelt and Wang (2010).
Foreign=	Indicator variable equal to 1 if the company reported any foreign taxes paid (Compustat data code 'txfo'; missing values set to zero), and equal to 0 otherwise.
LargeOffice=	Indicator variable equal to 1 if the audit firm office serviced a number of clients in a given year greater than or equal to the sample median, and equal to 0 otherwise.
Leverage=	Long-term debt (Compustat data code 'dltt') plus long-term debt in current liabilities (Compustat data code 'dlc'), scaled by total assets (Compustat data code 'at'). I winsorize *Leverage* at the top and bottom 1 percent.

Variable	Definition
Litig=	Indicator variable equal to 1 if the company is in a litigious industry following Francis, Philbrick, and Schipper (1994), and equal to 0 otherwise.
LogAF=	Natural log of *AF*.
LogAT=	Natural log of *AT*.
LogNAF=	Natural log of *NAF*.
LogTenure=	Natural log of the audit firm-client relationship.
Loss=	Indicator variable equal to 1 if the company reported negative income before extraordinary items (Compustat data code 'ib') in the current year or in either of the prior two years, and equal to 0 otherwise.
MandatoryRotation=	Indicator variable equal to 1 in the year of mandatory lead partner rotation (e.g., the year when the new lead engagement partner arrives), and 0 otherwise.
MB=	The market value of the company's equity, calculated by multiplying the end-of-year share price (Compustat data code 'prcc_f') by end-of-year shares outstanding (Compustat data code 'csho'), all scaled by common equity (Compustat data code 'ceq'). I winsorize *MB* at the top and bottom 1 percent.
Misstated=	Using data from Audit Analytics, an indicator variable equal to 1 if any period of company *i*'s financial statements from year t are subsequently restated, and equal to 0 otherwise.
Merger=	Following Cao et al. (2012), an indicator variable equal to 1 if the company was involved in M&A activity in the current year (Compustat data code 'sale_fn' codes AA, AB, AR, AS, FA, FB, FC, FD, FE, or FF), and equal to 0 otherwise.
Modify=	Indicator variable equal to 1 if the company reported an audit opinion code ('auop') different than 1, and equal to 0 otherwise (Francis and Krishnan 1999).
MW=	Indicator variable equal to 1 if the auditor reported at least one material weakness in the current year (Audit Analytics code 'count_weak'), and equal to 0 otherwise.
NAF=	The sum of IT fees (Audit Analytic data code 'it_fees'), tax fees (Audit Analytic data code 'tax_fees'), benefits fees(Audit Analytics data code 'benefits_fees'), and other fees (Audit Analytics data code 'other_fees') as reported in the Audit Analytics fee database.
OfficeClients=	The number of clients at the MSA-audit firm level in a given year.
OtherPtnrChanges=	A vector of indicator variables that are set equal to 1 for the year before mandatory lead partner rotation, the year of mandatory concurring partner rotation, the year before mandatory concurring partner rotation, years of non-mandatory concurring partner rotation, and set equal to 0 otherwise.
ReportLag=	Number of days between the company's fiscal year end (Compustat data code 'datadate') and the signing of the audit opinion (Audit Analytics data code 'sig_date_of_op_s').

Variable	Definition
RetVol=	The average daily stock return volatility during the current and prior year (Cao et al. 2012).
ROA=	Return on assets calculated as income before extraordinary items (Compustat data code 'ib') divided by lagged total assets (Compustat data code 'at'). I winsorize *ROA* at the top and bottom 1 percent.
Segment=	The number of business segments ('busseg') as reported in the Compustat segment database.
Special=	Indicator variable equal to 1 if the company reported any special items ('spi'), and equal to 0 otherwise.
XFin=	Following Rice and Weber (2012), equal to the sum of cash received from the sale of stock and issuance of long-term debt, minus cash used in repurchase of stock, payment of dividends, and reduction of debt (Compustat data codes sstk, dltis, prstkc, dv, dltr, dlcch; missing values reset to zero) scaled by average total assets (Compustat at). I winsorize *XFin* at the top and bottom 1 percent.

APPENDIX B

TABLES

Table 1

Panel A: Descriptive Statistics[a]

Variable	Mean	Median	Std. Dev.	25th Percentile	75th Percentile
Audit Fee Model					
Dacc$_{t-1}$	0.15	0.03	2.07	-0.11	0.30
Segment	1.98	1.00	1.43	1.00	3.00
Foreign	0.39	0.00	0.49	0.00	1.00
ROA	-0.04	0.02	0.29	-0.07	0.09
Loss	0.60	1.00	0.49	0.00	1.00
AR_INV	0.30	0.27	0.21	0.13	0.44
Leverage	0.19	0.08	0.27	0.00	0.30
Special	0.57	1.00	0.50	0.00	1.00
MB	2.60	1.66	4.04	0.93	3.01
Modify	0.32	0.00	0.47	0.00	1.00
ReportLag	70.77	70.00	33.50	59.00	77.00
Material Weakness Model					
MW	0.09	0.00	0.29	0.00	0.00
Misstated$_{t-1}$	0.17	0.00	0.37	0.00	0.00
XFin	0.05	0.00	0.25	-0.05	0.06
Chg_Mgmt	0.38	0.00	0.49	0.00	1.00
Modified Audit Opinion Model					
CashFlow	0.04	0.07	0.21	0.00	0.14
Merger	0.16	0.00	0.36	0.00	0.00
Litig	0.37	0.00	0.48	0.00	1.00
RetVol	0.04	0.03	0.02	0.03	0.05

[a]Descriptive statistics based on the sample of company-year observations from 2000-2012 used to estimate Equation (1). This sample was chosen because it is the least restrictive. Certain variables (*AF, AT, NAF, LogTenure, Expert50, OfficeClients* and *Chg_Aud*) are omitted from presentation to maintain anonymity of the participating audit firm. Variables from the audit fee model that are also included in other models (e.g., control weakness model) are not presented twice. Variables are described in the Appendix. Because of the proprietary nature of the data, the exact number of observations are not presented but the final dataset numbers in the thousands of observations.

Table 1 Continued

Panel B: Descriptive Statistics on Frequency of Rotation[a]

Type of Rotation	Frequency
Mandatory Lead Partner	9.44%
Non-Mandatory Lead Partner	5.80%
Mandatory Concurring Partner	3.82%
Non-Mandatory Concurring Partner	11.78%

[a]Statistics on frequency of partner rotation are from the base sample of company-year observations from 2000-2012 before any additional sample restrictions.

Table 2
Effect of Mandatory Lead Partner Rotation on Audit Fees[a]

	Full Sample	Large Offices	Small Offices
	(1)	(2)	(3)
MandatoryRotation	0.019	0.062**	-0.048
	(0.524)	(0.041)	(0.143)
LogAT	0.422***	0.419***	0.423***
	(0.000)	(0.000)	(0.000)
$DAcc_{t-1}$	0.004	0.014*	-0.004
	(0.519)	(0.093)	(0.575)
Segment	0.045**	0.066***	-0.001
	(0.019)	(0.006)	(0.962)
Foreign	0.273***	0.273***	0.241***
	(0.000)	(0.000)	(0.000)
ROA	-0.182**	-0.169	-0.142
	(0.035)	(0.193)	(0.116)
Loss	0.065	0.115**	0.018
	(0.103)	(0.038)	(0.724)
AR_INV	0.171	0.453**	-0.072
	(0.136)	(0.013)	(0.586)
Leverage	0.055	0.179*	-0.056
	(0.486)	(0.093)	(0.581)
Special	0.157***	0.163***	0.121***
	(0.000)	(0.000)	(0.001)
MB	0.015***	0.024***	0.006
	(0.003)	(0.000)	(0.225)
Modify	0.214***	0.229***	0.193***
	(0.000)	(0.000)	(0.000)
LogNAF	0.008	0.002	0.011
	(0.442)	(0.887)	(0.337)
Chg_Aud	-0.054	-0.016	-0.080
	(0.225)	(0.819)	(0.148)
Expert	0.135**	0.144*	0.100
	(0.016)	(0.065)	(0.195)
OfficeClients	0.001	0.014**	0.016
	(0.758)	(0.011)	(0.101)
LogTenure	-0.034	0.021	-0.071
	(0.420)	(0.724)	(0.182)
ReportLag	0.002**	0.001	0.003***
	(0.033)	(0.258)	(0.001)
Intercept	2.025***	1.440***	2.593***
	(0.000)	(0.000)	(0.000)
Controls for other partner changes	Yes	Yes	Yes
Year-Fixed Effects	Yes	Yes	Yes
Industry-Fixed Effects	Yes	Yes	Yes
R-squared	0.712	0.718	0.752

[a]Dependent variable equal to logged audit fees. Large (small) offices are those with greater than or equal to (less than) the median number of clients. Standard errors clustered by company. Two-tailed p-values in parentheses for all coefficients except for *MandatoryRotation* in Columns (2) and (3), in which I predict a positive (negative) association, *** p<0.01, ** p<0.05, * p<0.1. Observations from 2000-2012.

Table 3
Effect of Mandatory Lead Partner Rotation on Material Weaknesses[a]

	Full Sample	Large Offices	Small Offices
	(1)	(2)	(3)
MandatoryRotation	0.153	0.932**	-0.897*
	(0.675)	(0.014)	(0.060)
$Misstated_{t-1}$	0.975***	0.902**	1.052***
	(0.000)	(0.019)	(0.002)
LogAT	-0.206	-0.069	-0.169
	(0.156)	(0.710)	(0.185)
Loss	0.559**	0.917**	0.147
	(0.037)	(0.023)	(0.652)
XFin	0.577	0.975	0.809
	(0.212)	(0.266)	(0.206)
LogAF	1.140***	1.448***	0.961***
	(0.000)	(0.000)	(0.009)
LogNAF	0.022	0.096	0.001
	(0.704)	(0.358)	(0.994)
Chg_Aud	0.540	0.984*	0.163
	(0.338)	(0.090)	(0.802)
Chg_Mgmt	0.304	0.050	0.264
	(0.226)	(0.903)	(0.501)
Expert	-0.694	0.188	-1.542**
	(0.152)	(0.759)	(0.031)
OfficeClients	-0.039***	-0.102***	-0.022
	(0.007)	(0.002)	(0.644)
LogTenure	-0.028	0.168	-0.388
	(0.932)	(0.667)	(0.380)
ReportLag	0.030	0.015	0.099***
	(0.131)	(0.359)	(0.000)
Intercept	-11.496***	-13.514***	-14.304***
	(0.000)	(0.000)	(0.000)
Controls for other partner changes	Yes	Yes	Yes
Year-Fixed Effects	Yes	Yes	Yes
Pseudo-R2	0.276	0.345	0.338
ROC Curve	0.873	0.903	0.879
Goodness-of-Fit Test	0.080	0.995	0.481

[a]Dependent variable equal to 1 if the auditor reported a material weakness in the current year, 0 otherwise. Large (small) offices are those with greater than or equal to (less than) the median number of clients. Standard errors clustered by 2-digit SIC code. Two-tailed p-values in parentheses for all coefficients except for *MandatoryRotation* in Columns (2) and (3), in which I predict a positive (negative) association, *** p<0.01, ** p<0.05, * p<0.1. Observations from 2004-2012.

Table 4
Effect of Mandatory Lead Partner Rotation on Modified Audit Opinions[a]

	Full Sample	Large Offices	Small Offices
	(1)	(2)	(3)
MandatoryRotation	0.196	0.712**	-0.216
	(0.536)	(0.018)	(0.323)
LogAT	0.134**	0.140	0.117
	(0.025)	(0.102)	(0.113)
Segment	0.050	0.096*	0.005
	(0.355)	(0.096)	(0.956)
Foreign	0.292*	0.377**	0.317*
	(0.053)	(0.031)	(0.091)
MB	0.021	0.067**	-0.001
	(0.195)	(0.015)	(0.980)
Leverage	0.146	-0.540	0.603
	(0.681)	(0.393)	(0.140)
ROA	-0.680*	-0.754	-0.719
	(0.096)	(0.132)	(0.227)
AR_INV	-1.230***	-0.828**	-1.572**
	(0.007)	(0.044)	(0.017)
Loss	-0.031	-0.193	0.222
	(0.846)	(0.463)	(0.277)
Special	0.060	0.110	-0.105
	(0.592)	(0.553)	(0.583)
LogNAF	0.049	0.106**	0.026
	(0.216)	(0.049)	(0.637)
Chg_Aud	-0.586**	-0.371	-0.980**
	(0.016)	(0.252)	(0.027)
Expert	0.693***	1.216***	0.364*
	(0.002)	(0.004)	(0.077)
OfficeClients	0.004	0.023	0.099**
	(0.693)	(0.167)	(0.017)
LogTenure	-0.082	-0.260	0.052
	(0.630)	(0.232)	(0.820)
ReportLag	0.007**	0.005*	0.013***
	(0.039)	(0.068)	(0.005)
CashFlow	-0.303	-0.479	-0.216
	(0.538)	(0.540)	(0.736)
Merger	-0.215	-0.100	-0.249
	(0.156)	(0.732)	(0.262)
Litig	0.286**	0.464*	0.221
	(0.048)	(0.066)	(0.523)
RetVol	10.065**	7.346	7.637
	(0.029)	(0.433)	(0.141)
Intercept	-3.518***	-4.229***	-4.032***
	(0.000)	(0.001)	(0.002)
Controls for other partner changes	Yes	Yes	Yes
Year-fixed Effects	Yes	Yes	Yes
Pseudo-R2	0.242	0.294	0.240
ROC Curve	0.822	0.851	0.822
Goodness-of-Fit Test	0.798	0.371	0.882

[a]Dependent variable equal to 1 if the audit report was anything other than the standard unqualified audit opinion, 0 otherwise. Large (small) offices are those with greater than or equal to (less than) the median number of clients. Standard errors clustered by 2-digit SIC code. Two-tailed p-values in parentheses for all coefficients except for *MandatoryRotation* in Columns (2) and (3), in which I predict a negative (positive) association, *** p<0.01, ** p<0.05, * p<0.1. Observations from 2000-2012.

Table 5
Effect of Mandatory Lead Partner Rotation on Audit Quality, by Lead Partner's Industry Expertise[a]

	Audit Fees		Material Weaknesses		Modified Audit Opinion	
	(1)	(2)	(3)	(4)	(5)	(6)
	Industry Expertise	No Industry Expertise	Industry Expertise	No Industry Expertise	Industry Expertise	No Industry Expertise
MandatoryRotation	0.130**	-0.044	1.289**	-0.858*	-0.160	0.504
	(0.011)	(0.160)	(0.019)	(0.063)	(0.640)	(0.928)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo-R2/R2	0.670	0.753	0.381	0.274	0.268	0.272
ROC Curve	N/A	N/A	0.911	0.860	0.839	0.838
Goodness-of-Fit Test	N/A	N/A	0.506	0.466	0.686	0.418

[a]Dependent variables are *LogAF* (Columns 1 and 2), *MW* (Columns 3 and 4), and *Modify* (Columns 5 and 6). Industry Expertise (No Industry Expertise) are those companies audited by a lead partner with two or more (one) client in the company's industry. Control variables are from Equations (1), (2), and (3) as detailed in the text, and standard errors are clustered consistent with Tables 2-4. Sample contains all observations of mandatory lead partner rotation and all observations with no lead partner rotation. One-tailed p-values in parentheses *** p<0.01, ** p<0.05, * p<0.1.